



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/582,325

06/09/2006

Frank Gassert

06039

4943

23338 7590 04/02/2009
DENNISON, SCHULTZ & MACDONALD
1727 KING STREET
SUITE 105
ALEXANDRIA, VA 22314

EXAMINER

MILLER, ROSE MARY

ART UNIT

PAPER NUMBER

2856

MAIL DATE

DELIVERY MODE

04/02/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/582,325	Applicant(s) GASSERT, FRANK	
	Examiner ROSE M. MILLER	Art Unit 2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2006 and 30 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 June 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/30/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 30 August 2006 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because the listing for the US Patent Application is an improper number that does not exist and therefore has been crossed off the information disclosure statement. However, in order to further the prosecution of the present application, the Examiner was able to utilize the rest of the information provided to determine the proper US Patent Application number and has considered the reference. For printing purposes, the proper US Patent Application Number has been provided on the enclosed PTO-892 form.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the control signals being fed to a differential amplifier with a comparator as found in claim 3 must be shown or the feature(s) canceled from the claim(s). Presently, the drawings show the sensor signal being provided to the differential amplifier, not the control signals. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Art Unit: 2856

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the sensor comprising an inductive sensor, a capacitive sensor, a resistance sensor such as an elongation measuring tape, an optical sensor such as a laser, an acceleration sensor, or any combination of these as claimed in claims 7 and 16 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the converter being surrounded by a housing in which the sensor is placed as claimed in claims 11 and 18 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate

Art Unit: 2856

changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

5. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the sensor being placed in mount of the ultrasound oscillator as claimed in claims 12 and 19 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

6. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the sensor being positioned or integrated on or in the converter and/or on or in the booster and/or on or in the sonotrode as claimed in claim 17 must be shown or the feature(s) canceled from the claim(s). Currently the drawings depict a single sensor as being either in the converter, the booster, or the sonotrode. There is no depiction of more than one sensor or the

Art Unit: 2856

sensor being in or on more than one of the recited components of the welder. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

7. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: reference number 64, found on line 18 of page 8 of the specification. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

8. The disclosure is objected to because of the following informalities: the phrase "each of which has an outer diameter AD of 15 mm </- AD </- 10mm and/or an inner diameter ID of 8 mm </- ID </- 4/mm and/or a thickness of D of 1.5 mm </- D </- 0.5 mm"

Art Unit: 2856

is not a proper mathematical phrase. From the specification of the PCT it is clear that this phrase should read -- each of which has an outer diameter AD of $15\text{ mm} \leq AD \leq 10\text{mm}$ and/or an inner diameter ID of $8\text{ mm} \leq ID \leq 4\text{mm}$ and/or a thickness of D of $1.5\text{ mm} \leq D \leq 0.5\text{ mm}$ -- and the typographical error is in part due to the translation of the specification into English.

Appropriate correction is required.

9. Applicant is reminded that reference characters corresponding to elements recited in the detailed description of the drawings and used in conjunction with the recitation of the same element or group of elements in the claims should be enclosed within parentheses so as to avoid confusion with other numbers or characters which may appear in the claims and that the claims should be written in such a manner that the reference characters are not necessary to fully determine the scope of the claimed invention. See MPEP § 608.01(m).

10. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the sensor comprising multiple sensors in a combination comprising any of the following sensors: an inductive sensor, a capacitive sensor, a resistance sensor, an optical sensor, and an acceleration sensor as found in claim 7.

11. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the sensor being positioned on or integrated into two or more of the components of the ultrasonic welder as found in claim 17.

Claim Objections

12. Claim 22 is objected to because of the following informalities: the phrase "each of which has an outer diameter AD of $15\text{ mm} </- AD </- 10\text{mm}$ and/or an inner diameter ID of $8\text{ mm} </- ID </- 4\text{mm}$ and/or a thickness of D of $1.5\text{ mm} </- D </- 0.5\text{ mm}$ " is not a proper mathematical phrase. From the specification of the PCT it is clear that this phrase should read -- each of which has an outer diameter AD of $15\text{ mm} \leq AD \leq 10\text{mm}$ and/or an inner diameter ID of $8\text{ mm} \leq ID \leq 4\text{mm}$ and/or a thickness of D of $1.5\text{ mm} \leq D \leq 0.5$

Art Unit: 2856

mm -- and the typographical error is in part due to the translation of the claim into English. Appropriate correction is required.

13. Claim 1 is objected to because of the following informalities: the phrase "an/or" is clearly a typographical error and for the purposes of applying prior art has been treated as if it read --and/or--. Appropriate correction is required.

14. Claims 4-13 are objected to because of the following informalities: they are not complete sentences and the status identifier from the last amendment is improper. It appears Applicant accidentally crossed of the status identifier and the whole beginning of the claim for each of the above recited claims while trying to change the dependency of the claims. Therefore, each claim now begins with the phrase "Claim 1" instead of the appropriate beginning to a sentence as required. Appropriate correction is required.

Claim Rejections – 35 USC § 112

15. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

16. Claims 1-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-13 are rejected as being indefinite as the "steps" to the claimed method cannot be determined at this time and therefore, the full scope of the claimed invention cannot be ascertained. The bodies of the recited claims read like apparatus claims, with no clear or positive recitation of steps that one of ordinary skill in the art is to follow in order to perform the claimed method. Therefore, one of ordinary skill in the art would not be able to determine what the claimed "method" entails.

Claim 9 is further rejected as being indefinite as claim 1, from which claim 9 depends, is unclear if "the booster" is part of the apparatus provided. If the "booster" is not part of the apparatus, then claim 9 does not further limit claim 1 and is an improper claim.

Claim 13 is further rejected as the phrase "the ultrasonic welding device" lacks a proper antecedent basis in claim 1 from which claim 13 depends. There is no recitation of an "ultrasonic welding device" in claim 1, merely an "ultrasonic device".

Art Unit: 2856

Claims 14-23 are rejected as being indefinite. Claim 14 recites "with a high frequency voltage or a high frequency current flows to it". What is "it"? The "converter" or the "control system"? Claims 15-23 are rejected as they fail to correct the problems of claim 14 from which they depend.

Claims 21-22 are further rejected as being indefinite as the phrase "the piezoceramic sensor" lacks a proper antecedent basis in claim 14 from which claims 21-22 depend. The first instance of the "piezo-ceramic sensor" is not until claim 15. A suggestion for correction is to change the dependency of claim 21 from "14" to --15--.

Claim 23 is further rejected as being indefinite as the phrase "the piezo-ceramic breaker plates" lacks a proper antecedent basis. The first instance of the "piezo-ceramic breaker plates" is found in claim 22. A suggestion for correction is to change the dependency of claim 23 from "14" to --22--.

17. Regarding claims 1, 7, 14, and 16, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

18. Regarding claims 1 and 14, the phrase "if applicable" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

19. Regarding claim 14, the phrase "preferably" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

20. Please note that Applicant's problems under 112 are mainly due to the translation of the Application from a foreign language into English. The claims have been presented in a narrative format that while not incorrect, can and does lead to confusion as to what is actually being claimed. A suggestion for correction is to rewrite the claims into proper US format.

Claim Rejections - 35 USC § 102

21. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

22. Claims 1-2, 6, 8, 10, and 13-15 are rejected under 35 U.S.C. 102(b) as being anticipated by **Chan-Wong et al. (US 6,279,810)**.

Chan-Wong et al. discloses a method for measuring and/or regulating the oscillation amplitude of an ultrasound oscillator (2) of an ultrasound device (see Figure 1), comprising components (1, 2, 3) producing or transmitting oscillations in the form of at least one converter (2) and one sonotrode (1, 3), wherein in order to produce ultrasound oscillations the converter (2) is connected with a control system circuit (see Figure 2, column 3 lines 10-30), via which a high frequency voltage or current for the purpose of producing the ultrasound oscillations is sent to the converter (see Figure 2, column 3 line 10 -57), characterized in that a sensor (5) detecting the oscillation amplitudes is associated with at least one component element (2) and actual signals corresponding to the oscillation amplitudes determined by the sensor are monitored an/or compared with the expected signals in the control system circuit or a measuring and monitoring device (see column 3 lines 10-57) and that an output signal of the control circuit for the purpose of producing the ultrasound oscillations is varied as a function of the deviations occurring between the actual and expected signals (see column 3 lines 10 – column 4 line 35).

With regards to claim 2, **Chan-Wong et al.** discloses that alternating signals generated by the sensor (5) by means of oscillation amplitudes and/or direct voltage signals derived from them are sent to the control system circuit and/or the measuring and monitoring device to regulate the output signal or the output signals (see Figure 2).

With regards to claim 6, **Chan-Wong et al.** discloses at column 3 lines 32-33 that any suitable piezoelectric material may be used for the sensor and therefore, the use of a piezo ceramic sensor as the sensor is inherent in the system disclosed.

With regards to claim 8, **Chan-Wong et al.** clearly discloses in Figure 1 and column 3 lines 10-30 that the sensor is positioned or integrated on or in the converter (2).

Art Unit: 2856

With regards to claim 10, **Chan-Wong et al.** clearly discloses in Figure 1 and column 3 lines 10-30 that the sensor is positioned or integrated on or in the sonotrode (1) (sensor is positioned between the converter 2 and the sonotrode 1 in Figure 1).

With regards to claim 13, **Chan-Wong et al.** clearly discloses in Figure 1 and column 3 lines 10-30 that the sensor is positioned on a basic body of an ultrasonic welding device (sensor is positioned between the converter 2 and the sonotrode 1 in Figure 1 which are both basic body elements of an ultrasonic welder).

With regards to claim 14, **Chan-Wong et al.** discloses an ultrasound welding device comprising component parts (1, 2, 3) producing or transmitting oscillations in the form of at least one converter (2) and one sonotrode (1), a backing electrode associated with the sonotrode (1, backing electrode inherent in ultrasound welding/bonding machine disclosed), between which and the sonotrode compressible, weldable parts are placed (inherent in welding/bonding machine disclosed), where for the purpose of oscillation production an amplitude is applied to the converter via a control system (see Figure 2) with a high frequency voltage or a high frequency current flows to it (see column 3 lines 10-45), characterized in that a sensor (5) that captures the amplitude (see column 3 lines 10-45) is associated with at least one component element (2).

With regards to claim 15, **Chan-Wong et al.** discloses at column 3 lines 32-33 that any suitable piezoelectric material may be used for the sensor and therefore, the use of a piezo ceramic sensor as the sensor is inherent in the system disclosed.

Conclusion

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Salzer et al. (US 3,857,279) discloses a monitoring and control means for evaluating the performance of vibratory-type devices.

Kajiwara et al. (US 5,884,835) discloses an ultrasonic bonding method and an ultrasonic bonding apparatus.

Chan et al. (US 6,286,747 B1) discloses an ultrasonic transducer.

Fan et al. (US 6,827,247 B1) discloses an apparatus for detecting the oscillation amplitude of an oscillating object.

Art Unit: 2856

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROSE M. MILLER whose telephone number is (571)272-2199. The examiner can normally be reached on Monday - Friday, 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on 571-272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R. M. M./

Examiner, Art Unit 2856

26 March 2009

/Hezron Williams/

Supervisory Patent Examiner, Art Unit 2856